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RUEHRC/DEPT OF AGRICULTURE WASHDC  
RHEBAAA/DEPT OF ENERGY WASHDC  
RUEAUSA/DEPT OF HHS WASHDC  
RHEHAAA/WHITE HOUSE WASHDC  
RUCPDC/NOAA WASHINGTON DC  
RUEKJCS/SECDEF WASHINGTON DC  
RHHMUNA/CDR USPACOM HONOLULU HI  
RHMFISS/COMUSKOREA SCJS SEOUL KOR  
RHMFIUU/CHJUSMAGK SEOUL KOR

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SENSITIVE

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STATE FOR OES/IHB, OES/SAT, OES/PCI AND OES/EGC  
STATE FOR EAP/K, ISN/NESS AND STAS  
STATE PASS TO EPA FOR INTERNATIONAL PROGRAMS  
WHITE HOUSE FOR OSTP AND CEQ  
DOE FOR INTERNATIONAL, NE, FE, AND EERE  
USDOC FOR 4400/MAC/EAP/OPB/ITA/TA  
USDOC FOR NIST  
HHS FOR OGHA  
HHS PASS TO NIH FOR FIC  
STATE PASS TO NSF FOR INTL PROGRAMS  
STATE PASS TO NRC FOR INTL PROGRAMS

E.O. 12958: N/A

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SUBJECT: SEOUL ESTH UPDATE - OCTOBER 2009

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Environment  
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Korea Ranks Ninth Largest CO2 Emitter  
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11. (SBU) Korea is the ninth largest emitter of carbon dioxide gas in the world, the government said on October 19, quoting a report using 2007 data by the International Energy Agency (IEA). The country ranked as the tenth largest CO2 emitter in an earlier report using 2005 emissions data. Korea's CO2 emissions have increased 113 percent from 1990, the highest percentage growth rate among OECD member countries over that time period. Total Korean CO2 emissions in 2007 were 488.7 million tons, a 9.3 percent increase over the 448

million tons of CO2 emitted in 2005. On a per capita basis, CO2 emissions reached 10.1 tons in 2007, up from 9.3 tons per capita in 2005.

#### Korea Jumps into Carbon Capture

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12. (SBU) The government plans to invest 100 billion won (USD 86 million) over a 5-year period in pursuit of technology to help capture and store carbon dioxide produced from factories and power plants over the next five years, the Ministry of Knowledge Economy announced on October 13. The investment is a significant increase from current annual 14.5 billion won (USD 12.5 million) in public spending for carbon capture and storage (CCS) technology. The government hopes to develop fundamental CCS technology for use at smaller power plants producing about 10 megawatts of electricity by 2014 and plans to encourage a consortium of private companies to develop CCS technology for larger power plants producing over 500 megawatts by 2015. The Ministry also announced that the Korea Electric Power Corporation will also invest 1.4 trillion won (USD 1.2 billion) by 2020 for building new power plants that emit 90 percent less carbon dioxide than existing ones.

#### All Apartment Buildings to Be Built "Green"

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13. (SBU) Every new apartment in Korea from now on must be built "green," the Ministry of Land, Transport and Maritime Affairs said in an October 13 press statement. A revised Housing Act, which is to take effect in late October, would require contractors building

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housing complexes of 20 units or more to make them "green homes." The revision defines specific standards for the construction and was developed by the government to help conserve energy and reduce carbon emissions. An apartment is defined as green if it uses 15 percent or less energy, or leads to the emission of 15 percent or less carbon dioxide equivalents, than a normal home. If the unit is 60 square meters or smaller, the threshold is reduced from 15 to 10 percent. The Ministry said the installation of energy-conserving heating and electrical systems as well as the use of environmentally friendly home appliances will count toward the carbon dioxide calculations. Green home certification will take place in the drafting phase before construction begins, but final appraisal is subject to a post-construction inspection.

#### Government Challenges Automakers to Produce Electric Cars

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14. (SBU) During a recent economic meeting chaired by President Lee Myung-bak, the Ministry of Knowledge Economy reported to the President an outline to get domestic automakers to mass-produce electric vehicles by 2011, two years ahead of the original plan. Although details have not been made public, the government said it will offer full support to the auto industry to speed up the mass production of electric vehicles, such as financial support for research and development including a 400 billion won (USD 340 million) investment over the next 5 years to support development of high-performance batteries and other related systems. According to a domestic news article, the local auto industry is not in favor of the plan because of the major production changes they would be forced to introduce at short notice. Hyundai Motor Company said it can meet the emission requirements of the United States, Europe and other major markets by improving upon its existing gasoline and diesel engines, by making lighter vehicles that burn less fuel, and by producing hybrid electric vehicles.

15. (SBU) Separately, Hyundai Kia Automotive Group and the Korea Electric Power Corporation (KEPCO) signed an MOU to jointly develop electric vehicles and battery chargers. Hyundai Kia said it plans to have the electric vehicles ready for trial by August 2010 and to begin commercial production by 2011. KEPCO will develop the battery chargers by August 2010 for use with the new vehicle. Electric vehicles in general are expected at first to cost three to four times more than similar gasoline-powered cars largely due to the

cost of the battery. Experts predict, however, that advances in research and economies of scale will bring down battery costs dramatically over the next ten years.

#### SK Energy Signs Hybrid Battery Deal with Daimler

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16. (SBU) According to an October 25 local news report, the German automotive group Daimler has selected the Korean company SK Energy to supply it with lithium-ion batteries for hybrid electric vehicles produced by Daimler's Mitsubishi Fuso unit. The Japan-based manufacturer, 85 percent owned by Daimler, has sold 190,000 hybrid buses and trucks since 2007. The SK Energy deal is the latest in a series of agreements between Korean lithium-ion battery makers and major automobile manufacturers. LG Chem earlier this year signed a

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contract to supply lithium-ion batteries to Hyundai-Kia Automotive Group and to the General Motors for its extended range electric vehicle the Chevy Volt. Samsung SDI and the German auto parts supplier Bosch established SB Limotive in August as a joint venture specializing in batteries for electric cars. The company has already won a contract to supply lithium-ion batteries for BMW between 2013 and 2020.

#### South Jeolla Province to Build Massive Wind Power Complex

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17. (SBU) South Jeolla Province signed a contract with 26 companies and financial institutions on October 15 to build a massive 5 gigawatt wind power complex along its southwestern coast and adjacent islands and seaways. The 26 firms, including wind power businesses, machinery manufacturers, and financial companies, will invest a total of 15.5 trillion won (USD 14 billion) over the next 20 years to build the complex. Separately, Hyundai Heavy Industries (HHI) has begun production of wind turbine generators at its new manufacturing facility, also located in South Jeolla Province, using licensed designs for turbine generators from American Superconductor Corporation through its Austrian subsidiary AMSC Windtec. HHI is investing more than 880 billion won (USD 760 million) to develop the facility.

#### Science & Technology

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International Aeronautical Congress Focuses on Space Technology for Sustainable Peace and Progress

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18. (SBU) The 60th International Astronautical Congress (IAC), held October 12-16 in Daejeon, drew some 3,000 people from 70 countries, including representatives of global space agencies, aerospace industry leaders, academics, experts and scientists to share information for furthering the development of space technology for sustainable peace and human progress. At the opening ceremony, President Lee Myung-bak underscored the importance of international collaboration in space research and development and said the Korean government is considering participating in the U.S.-led international lunar exploration program. "Many countries have cooperated to carry out large-scale space projects such as the lunar exploration program, and there have been attempts to address global problems such as climate change and natural disasters by collaboratively utilizing satellite information," Lee said. During its exhibition held in tandem with the conference, the U.S. National Aeronautical and Space Administration (NASA) displayed models of lunar modules, a space rocket, and a 4.7 kilogram moon rock.

#### NASA Administrator Advances U.S.-Korean Aerospace Cooperation

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19. (SBU) National Aeronautic and Space Administration (NASA) Administrator Charles Bolden, Jr. said at the 60th International

Astronautical Congress in Daejeon that Korea has made noticeable strides with its robust space program by building satellites and

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launching a space rocket. In meetings with the Ministry of Education, Science and Technology (MEST) and with the Korea Aerospace Research Institute, he said Korea has the potential to become an important partner of the United States in its efforts aimed at advancing exploration and technology for the peaceful use of space. He said that future cooperative efforts could take place in a wide range of promising areas such as lunar exploration, satellites, space communications, aeronautics, earth science, as well as science education. During Administrator Bolden's visit, NASA and MEST initialed a "Joint Report on Potential Opportunities for Enhanced Cooperation."

NASA Astronaut and Assistant Administrator  
for Education Reach Out to Students

¶10. (SBU) In addition to participating in the IAC during their visit to Korea, NASA Astronaut Janet Kavandi and NASA Assistant Administrator for Education Joyce Winterton had a lively roundtable discussion with leading female scientists in the field of astronomy and spoke with groups of Korean students. Astronaut Kavandi spoke to approximately 100 science students at the U.S. Embassy Public Affairs Office on her experiences as an astronaut. Dr. Kavandi also spoke at the Daejeon Christian International School and participated in a number of public space education events in Daejeon. Assistant Administrator Winterton spoke with teachers and students at Hanyang University on "Science, Technology, Engineering and Math Challenges" and met with science education policy makers and educators where information was shared and exchanged on NASA science and math education programs. She also traveled to Busan where she lectured at the Busan Science High School. Her talk proved so popular that the High School is sending approximately 90 students to the Goddard Space Flight Center in November where NASA will host their visit and tour.

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Health  
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Mass Vaccinations Begin amid  
Full-Fledged H1N1 Epidemic

¶11. (SBU) Approximately 60,000 newly confirmed H1N1 infections were reported in Korea the week of October 25, bringing the country's total cumulative case count since May to over 100,000. The total number of H1N1-related deaths reached 45 as of November 4, which still represents a low mortality rate. The Ministry of Health, Welfare and Family Affairs began immunizing health care service personnel on October 27, the first of several defined vulnerable groups to be vaccinated in a program aimed at vaccinating 35 percent of the population, or approximately 17 million people. School-aged children are the next vulnerable group to begin free vaccinations starting from November 11 until the end of December. The vaccination of students is critical step in controlling the spread of the disease since more than 75 percent of new cases in the month of October were diagnosed in this group. As of November 2, more than 500 elementary, middle or high schools (approximately ten percent of the total number of schools in Korea) had temporarily shut their doors. The vaccination program will continue with

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children over 6 months old and pregnant women receiving shots between mid-December and early January at clinics or hospitals of their choice, where each vaccination will cost 15,000-30,000 won (USD 13-26). The last priority groups consist of the elderly, chronically ill patients registered with the National Health Insurance Corp, the police, and military personnel. They will begin receiving vaccinations after January 1. Meanwhile, those not included in a priority group can start getting shots by mid-January.

The Korea Centers for Disease Control and Prevention (KCDC) said the vaccination program is being conducted in stages using vaccines as soon as they are produced by domestic pharmaceutical company Green Cross Corporation.

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Profile  
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Korea Aerospace Research Institute  
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¶12. (SBU) The Korea Aerospace Research Institute (KARI), located in Daejeon, in central Korea, was founded in October 1989 and charged with performing basic and applied research in aerospace technology and carrying out the nation's aeronautics and space programs. KARI operates the Naro Space Center, located on Oenaro Island on the southwestern coast 485 kilometers south of Seoul. Opened in August with final construction completed November 4, and built largely with Russian technology, the Naro Center includes a launch pad and landing field, a control tower, facilities for rocket and satellite assembly and testing, a media center, and an electric power station.

¶13. (SBU) KARI launched its first satellite, the Korea Multi-Purpose Satellite (KOMPSAT-1), in 1999. It launched KOMPSAT-2 in 2006. KARI is currently developing the Korea Multi-Purpose Satellite 3 and 5 (KOMPSAT-3 & 5). The goal of KOMPSAT-3, which is scheduled to be launched in late 2011, is to provide continuous satellite earth observation via high-resolution electro-optical images. It will be equipped with a Multi-Spectral Camera, able to acquire 1 meter resolution panchromatic images for surveillance of massive natural disasters, utilization of mineral resources, construction of a Geographic Information System, and cartography. KOMPSAT-5, slated for launch in 2010, will use a synthetic aperture radar and operate at an altitude of 685 km in a sun-synchronous orbit to execute all day weather and earth observations of the Korean Peninsula for environmental, agricultural and oceanographic monitoring applications during its 5-year mission.

¶14. (SBU) KARI developed single-stage and two-stage scientific sounding rockets in KARI developed single- and two-stage scientific sounding rockets in 1993 and 1998 respectively. It is currently implementing the Korea Space Launch Vehicle (KSLV) Program, consisting of two low-earth orbit launch vehicles -- KSLV-1 & 2. In August this year, KARI launched KSLV-1 with a 100 kg scientific satellite, but failed to place the satellite in its intended orbit.

KARI plans to attempt to launch the same model KSLV-1 again in May ¶2010. KSLV-2, which will carry a 1.5 ton payload, is scheduled for launch in 2017. KARI is undertaking two other major aircraft R&D programs -- the Korean Helicopter Development Program and the Smart Unmanned Aerial Vehicle Development Program. KARI also conducts

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research in several other aerospace and aeronautics fields such as remote sensing, aerodynamics, navigation and control, and aerospace safety.

STEPHENS